

# A Note on the Ranking of Saudi Arabian Universities based on highlycited.com

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## Abstract

Recently, Thomson Reuters has published its 2014 list of highly cited researchers (HCRs)[1]. Initial studies over the list [2] suggested that some universities (for instance, King Abdulaziz University in Saudi Arabia) may have been manipulating its world ranking by contracting with highly cited researchers. In this work, we analyse the ranking of other Saudi universities based solely on the list. Our analysis suggests that other universities in Saudi Arabia do not follow the steps of King Abdulaziz University when it comes to contracting with HCRs.

## 1 Preprocessing the data

Before analysing the 2014 HCRs list, we need to preprocess the data for the following main reasons:

- Inconsistency on institutes names.
- Handling duplicates on the list.

For inconsistent naming, we make sure that the affiliation name is the same across the list. For instance, King Abduluziz University is the same as King Abdulaziz University or Urbana Champaign and Urbana-Champaign. There are other minor inconsistencies including missing the country of some institutes while mention it in other entries. For duplicate authors, there are two researchers with different primary affiliations across the list and one author with different secondary affiliation.

In this work, we do not try to combine different institutions into a single one. Instead, we count them as if they were different even though, in reality, they may belong to the same institution. Thus, we do not combine all universities belong to the University of California system into one institute.

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We see the recent list more informative than the former one (i.e., the 2001 list) in a sense that it makes a clear distinction between primary and secondary affiliations for a given researcher.

## 2 Institutes Ranking

Rank	Institute Name	Number
1	Harvard University	100
2	Stanford University	51
3	Chinese Academy of Sciences	41
4	University of California, Berkeley	38
5	NIH	32
6	University of Oxford	31
7	Duke University	29
8	Massachusetts Institute of Technology (MIT)	28
9	University of California, San Diego	27
9	University of Michigan - Ann Arbor	27
9	Northwestern University	27
9	Princeton University	27
10	University of Washington	26
11	Brigham & Womens Hosp	24
12	University of California, Los Angeles	23
12	Wellcome Trust Sanger Inst	23
13	University of Cambridge	22
13	University of California, Santa Cruz	22
14	Cornell University	21
14	Imperial College London	21
14	The Johns Hopkins University	21
14	University of Chicago	21
14	Columbia University	21
15	Mayo Medical School	20

Table 1: Institutes ranking based on primary affiliations

Rank	Institute Name	Number
1	King Abdulaziz University	133
2	Harvard University	35
3	Massachusetts Gen Hosp	11
4	Massachusetts Institute of Technology (MIT)	10
5	The University of Tokyo	9
6	University of Copenhagen	8
7	University of California, Berkeley	7
7	University of Melbourne	7
8	University of Cambridge	6
9	Howard Hughes Med Inst	5
9	Dana Farber Canc Inst	5
9	Inserm	5
9	Imperial College London	5
10	Stanford University	4
10	Monash University	4
10	University of Chicago	4
10	University of California, San Francisco	4
10	University of British Columbia	4
10	New York University	4
10	University of Toronto	4
10	University of Oxford	4
10	Utrecht University	4
10	University of Wageningen	4
10	University of Washington	4
10	King's College London	4

Table 2: Institutes ranking based on secondary affiliations

Rank	Institute Name	Number
1	King Abdulaziz University	144
2	Harvard University	135
3	Stanford University	55
4	University of California, Berkeley	45
5	Chinese Academy of Sciences	43
6	Massachusetts Institute of Technology (MIT)	38
7	University of Oxford	35
8	NIH	34
9	University of Washington	30
10	Princeton University	29
10	Duke University	29
11	University of Cambridge	28
11	University of Michigan - Ann Arbor	28
11	Northwestern University	28
12	University of California, San Diego	27
13	Wellcome Trust Sanger Inst	26
13	Imperial College London	26
14	Brigham & Womens Hosp	25
14	University of Chicago	25
15	University of California, Los Angeles	24
15	The Johns Hopkins University	24
15	The University of Tokyo	24

Table 3: Institutes ranking based on primary and secondary affiliations

## 2.1 Country Ranking

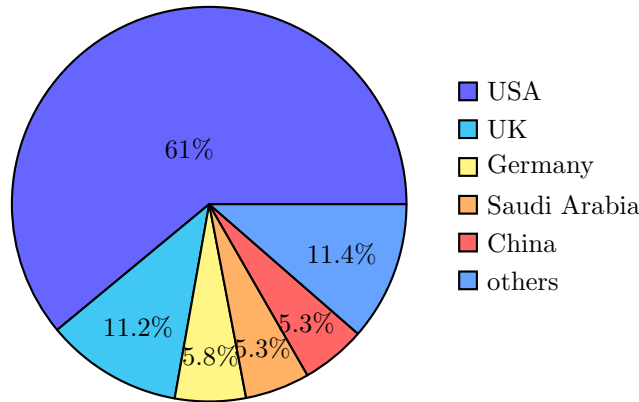


Figure 1: HCRs country distribution based on primary and secondary affiliations

### 3 Saudi Universities

There are four Saudi universities mentioned on the list: King Abdulaziz University (KAU), King Saud University (KSU), King Abdullah University of Science and Technology (KAUST) and King Fahd University of Petroleum and Minerals (KFUPM). In Table 4, we list their ranking based on either primary or secondary affiliations. For example, KAU is ranked 24<sup>th</sup> when considering the number of HCRs primary affiliated with it while its ranked the 1<sup>st</sup> when it comes to the number of HCRs mentioned it as a secondary affiliation.

Name	Primary (out of 34)	Secondary (out of 13)	Both (out of 38)
KAU	24	1	1
KSU	23	12	25
KAUST	31	N/A	35
KFUPM	34	13	37

Table 4: Saudi universities ranking based on primary/secondary affiliations

Similarly, Table 5 shows, for every Saudi university, the number of primary affiliated HCRs and the number of secondary affiliated HCRs. As mentioned in [2], King Abdulaziz University (KAU) has a weird standing with this regard. While there are 11 researchers primary affiliated with it, there are 133 researchers mentioned it as their secondary affiliation. Other universities have a reasonable trade-off between these two numbers.

Name	#Primary	#Secondary	Total
KAU	11	133	144
KSU	12	2	14
KAUST	4	0	4
KFUPM	1	1	2

Table 5: Number of HCRs affiliated with Saudi universities.

We go one step further and look for the number of singly affiliated researchers for an institute. A researcher is said to be a singly affiliated if he/she has no secondary affiliation. Figure 2 shows the number of singly affiliated researchers along with the total number of primary affiliated researchers.

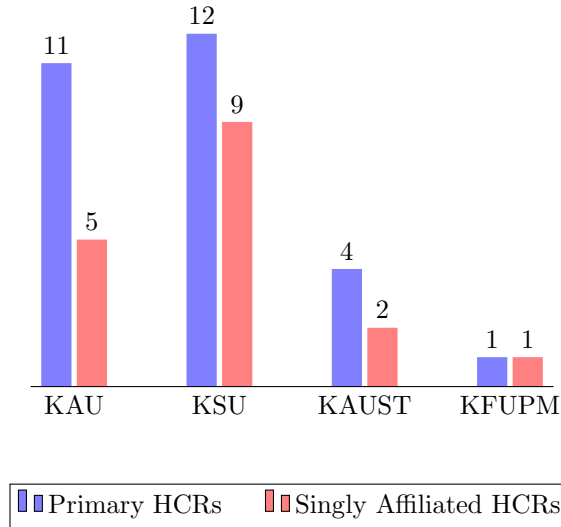


Figure 2: The number of primary HCRs to Singly Affiliated HCRs

## 4 Conclusion

In this work, we conducted a simple study over the ranking of Saudi Arabian universities based on the data available on [highlycited.com](http://highlycited.com). Foreseeable work include analysing the universities ranking while taking into account other resources available on the web and conducting a comparative study with the 2001 list.

## References

- [1] Highly Cited Researchers. <http://highlycited.com>. Accessed: 2014-08-14.
- [2] Lutz Bornmann and Johann Bauer. Which of the world’s institutions employ the most highly cited researchers? an analysis of the data from highlycited.com. *CoRR*, abs/1407.2037, 2014.